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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,974	09/26/2005	Andreas Kornbichler	S1-013P03225	1698
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EXAMINER BARKER, MATTHEWM				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/550,974

Applicant(s)

KORNBICHLER ET AL.

Examiner

MATTHEW M. BARKER

Art Unit

3662

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13, 14 and 16-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 13, 14 and 16-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/S508)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 13 and 23 are objected to because of the following informalities:

In line 2 of claim 13, --and-- should be inserted after "signal;"

In line 8 of claim 13, the semicolon should be removed after "signal".

In line 3 of claim 23, --and-- should be inserted after "target;"

In line 9 of claim 23, the semicolon should be removed after "signal".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 34 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 34 requires that the average power of the receiving oscillator be measured. According to page 13, lines 12-14 of the specification, "the strength of the reflection at the moment of switching on is represented as the average on period of the oscillator, that is to say, the average oscillator power." The claims fail to comply with the enablement requirement because it is not clear over what period of time the claimed

"average power" is measured, nor is it clear how an *average* power or *average* on period can be representative of the strength of a reflection at a *momentary point* in time i.e. the "moment of switching". It is noted that method claim 32 simply requires a measurement of the output power, not an average. It is apparent that a momentary power measurement would be representative of the strength of a reflection at the moment of switching, as appears to be indicated by claim 32, and claim 34 has been examined as such.

Claim Rejections- Admitted Prior Art

4. Claims 13, 14, 16, 17, 19, 20, 23-26, and 29-34 are rejected as being anticipated by or, in the alternative, obvious over the admitted prior art of the specification shown in Figure 4.
5. Regarding claims 13, 16, 17, 20, 23-26, and 32-34, The admitted prior art of Figure 4 discloses a pulsed distance measurement radar method and transceiver assembly including a transmitter, receiver, receiver oscillator (HFO-Rx), and mixer/detector (MIX) that measures the power of the receiving oscillator. Figure 4 discloses switching the oscillator on and off (Po-Rx) periodically following a clock rate (CLK-Rx; page 5, lines 5-26). The discussion of Figure 4 does not explicitly disclose that the transient response (start up time) of the receiving oscillator is influenced by the reception signal, however it is apparent that such an influence is inherent, as it is well known in the art that radar receivers experience coupling between the antenna and oscillator, which influences the transient response of the oscillator. However, even if not inherent, the coupling phenomenon is acknowledged as "practically unavoidable" by the

specification on page 12, line 26- page 13, line 7. It would have been obvious to one of ordinary skill in the art that the transient response of the receiver oscillator of Figure 4 would be influenced by the received signal, especially in the absence of an isolator to separate the oscillator and antenna.

Regarding claim 14, the claim merely describes effects of the coupling discussed above. It would have been obvious that the average power and build-up time of the oscillator of Figure 4 would be influenced as discussed above and acknowledged in the present specification.

Regarding claim 19, Figure 4 discloses a separate oscillator for transmission (HFO-Tx).

Regarding claims 29-31, the admitted prior art discloses that such systems may be utilized in combination with motor vehicles, buildings, and industrial plants (page 1, lines 11-17).

6. Claim 18 is rejected as being obvious over the admitted prior art of the specification shown in Figure 4 as applied to claim 13 above, and further in view of the admitted prior art of Figures 1 or 2.

Figure 4 does not disclose that the receiving oscillator is also the transmitting oscillator. However, prior art Figures 1 and 2 disclose a related transceiver using a single oscillator (HFO). It would have been obvious to one of ordinary skill in the art to use a single oscillator for both transmission and reception in order to achieve the conventional advantage of reducing part count and cost.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 21, 22, 27, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art of the specification shown in Figure 4 as applied to claims 13 and 23 above, and further in view of Stikvoort et al. (6,192,229).

The discussion of prior art Figure 4 does not disclose the details of the mixers, and therefore do not disclose the claimed diode configurations of the claims. Stikvoort discloses a diode mixer circuit including the claimed polarities and measurement signal formations (See Figure 1 and Abstract). It would have been obvious to modify the mixer of Figure 4 as suggested by Stikvoort in order to ensure low noise and low distortion (column 2, lines 15-29).

9. Claims 13, 14, 18, 20, 23-26, 29, and 32-34 are rejected under 35 U.S.C. 103(a) as obvious over Kai in view of admitted prior art of the present specification shown in Figure 4.

Regarding claims 13, 16, 17, 20, 23-26, and 32-34, Kai discloses a pulsed distance measurement radar method and transceiver assembly (Figure 1) including a

transmitter, receiver, receiver oscillator (2), and mixer/detector (9) configured to measure the power of the receiving oscillator (column 6, lines 26-37). Kai does not explicitly disclose that the transient response (start up time) of the receiving oscillator is influenced by the reception signal, however it is apparent that such an influence is inherent, as it is well known in the art that radar receivers experience coupling between the antenna and oscillator, which influences the transient response of the oscillator. However, even if not inherent, the coupling phenomenon is acknowledged as "practically unavoidable" by the specification on page 12, line 26- page 13, line 7. It would have been obvious to one of ordinary skill in the art that the transient response of the receiver oscillator of Kai would be influenced by the received signal, especially in the absence of an isolator to separate the oscillator and antenna.

Kai does not disclose switching the oscillator on and off. Admitted prior art Figure 4 discloses switching the oscillator on and off (Po-Rx) periodically following a clock rate (CLK-Rx). It would have been obvious to modify Kai to switch the oscillator on and off periodically following a clock rate as taught by the admitted prior art in order to save power (see page 4, line 24- page 5, line 9 of background section of the present specification).

Regarding claim 14, the claim merely describes effects of the coupling discussed above. It would have been obvious that the average power and build-up time of the oscillator of Kai would be influenced as discussed above and acknowledged in the present specification.

Regarding claim 18, Kai discloses that the receiving oscillator is also a transmitting oscillator (See Figure 1).

Regarding claim 19, Kai does not disclose a separate transmitting oscillator for generating the transmission signal. Figure 4 discloses separate oscillators. It would have been obvious to one of ordinary skill in the art to modify Kai to include separate oscillators in order to achieve the well known advantage of ensuring isolation between separate transmit and receive frequency spectra.

Regarding claim 29, Kai discloses the assembly in combination with a motor vehicle (column 1, lines 5-8).

Regarding claims 30 and 31, Kai discloses the assembly in combination with a motor vehicle. The admitted prior art in the present specification discloses such systems may be utilized in combination with motor vehicles, buildings, and industrial plants (page 1, lines 11-17). It would have been obvious to one of ordinary skill in the art to use the radar assemblies of Kai in any setting that requires the detection of a target in order to achieve conventional advantages in the art with no new or unexpected results.

10. Claims 21, 22, 27, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kai or Kai in view of the admitted prior art of the present specification as applied to claims 13 or 23 above, and further in view of Stikvoort et al. (6,192,229).

Kai does not disclose the details of the mixers, and therefore do not disclose the claimed diode configurations of the claims. Stikvoort discloses a diode mixer circuit

including the claimed polarities and measurement signal formations (See Figure 1 and Abstract). It would have been obvious to modify the mixer of Kai or Figure 4 as suggested by Stikvoort in order to ensure low noise and low distortion (column 2, lines 15-29).

Response to Arguments

11. Applicant's arguments filed 3/31/2009 have been fully considered but they are not persuasive.
12. On page 8 of the Remarks, Applicant argues that the specification enables using a detector to measure the average power of the receiving oscillator, pointing to pages 11-12 where it is taught that the detector functions as a power meter. The argument is not convincing because it is not disputed that the specification indicates a calculation of the average power, however the specification does not enable one of ordinary skill in the art to make such a calculation as detailed above. Given that the power measurement is made for the strength of the reflection at a moment in time (page 13, lines 12-13), it is apparent that the power, not average power, is measured as is claimed in claim 32.
13. On pages 9-10 of the Remarks, Applicant argues that the received signal of Kai might be coupled to the oscillator to some extent, but the start-up time of the oscillator would not have been influenced by the received signal. The argument is not convincing because as Applicant has correctly noted in the specification at page 12, line 26- page 13, line 7, coupling of the receiving antenna and oscillator and hence influenced start up times are "practically unavoidable". The claims recite no structure that differs from that

of the proposed combination of Kai and the admitted prior art of Figure 4, or from that even of Figure 4 alone. Applicant is encouraged to recite any unique structural components that differentiate the receiver of the present invention from that of the prior art.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **MATTHEW M. BARKER** whose telephone number is (571)272-3103. The examiner can normally be reached on **M-F, 8:30 AM-5:00 PM**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza can be reached on (571)272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. M. B./
Examiner, Art Unit 3662

/Thomas H. Tarcza/
Supervisory Patent Examiner, Art Unit 3662